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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of) Group Art Unit: 1616
Steven C. Quay)
Application No. 08/896,821) Examiner: G. HOLLINDEN
Filed: July 18, 1997)
For: METHOD OF ULTRASOUND)
IMAGING)
) INFORMATION DISCLOSURE
) STATEMENT
2001 Ferry Building
San Francisco, CA 94111
(415) 433-4150

Assistant Commissioner
for Patents
Washington, D.C. 20231

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, DC 20231

on March 22, 1999

Dated: 3-22-99 by BamBacual
Name

Sir:

Applicant submits herewith patents, publications or other information [attached hereto and listed on the attached Form PTO-1449 (modified)] of which he is aware, which he believes may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR § 1.56.

This Information Disclosure Statement:

- (a) accompanies the new patent application submitted herewith. 37 CFR § 1.97(a).
- (b) is filed within three months after the filing date of the application or within three months after the date of entry of the national stage of a PCT application as set forth in 37 CFR § 1.491.
- (c) as far as is known to the undersigned, is filed before the mailing date of a first Office Action on the merits.
- (d) is filed after the first office action and more than three months after the

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application's filing date or PCT national stage date of entry filing but, as far as is known to the undersigned, prior to the mailing date of either a final rejection or a notice of allowance, whichever occurs first, and is accompanied by either the fee (\$240) set forth in 37 CFR § 1.17(p) or a certification as specified in 37 CFR § 1.97(e), as checked below.

(e) [] is filed after the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and the Issue Fee has not been paid, and is accompanied by the fee (\$130) set forth in 37 CFR § 1.17(i)(1) and a certification as specified in 37 CFR § 1.97(e), as checked below. This document is to be considered as a petition requesting consideration of the information disclosure statement.

[If either of boxes (d) or (e) are checked above, the following "certification" under 37 CFR § 1.97(e) may need to be completed.] The undersigned certifies that:

(f) [] Each item of information contained in the information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this information disclosure statement.

(g) [] No item of information contained in this information disclosure statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR § 1.56(c) more than three months prior to the filing of this information disclosure statement.

A list of the patent(s) or publication(s) is set forth on the attached Form PTO-1449 (Modified).

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A copy of the items on PTO-1449 (Modified) is supplied herewith:

(h) each (i) none (j) only those not marked with an asterisk:

Those patents and publications which are marked with an asterisk (*) in the attached PTO Form 1449 are not supplied because they were previously cited by or submitted to the Office in a prior application No. 08/770,522, filed December 20, 1996 which is a continuation application of application No.

08/649,910, filed May 16, 1996 which is a continuation application of 08/380,085 filed January 30, 1995, now U.S. Patent No. 5,558,854 which is a divisional application of 07/936,011 filed September 2, 1992 which is a continuation-in-part application of 07/893,657 filed June 5, 1992, now U.S. Patent No. 5,409,688 which is a continuation-in-part application of 07/761,311 filed September 17, 1991, and relied upon in this application for an earlier filing date under 35 U.S.C. 120.

A concise explanation of relevance of the items listed on form PTO-1449 (Modified) is:

(k) not given

(l) given for each listed item

(m) given for only non-English language listed item(s) [Required]

(n) is in the form of an English language copy of a Search Report from a foreign patent office, issued in a counterpart application, which refers to the relevant portions of the references [copy attached].

The Examiner is reminded that a "concise explanation of the relevance" of the submitted items "may be nothing more than identification of the

particular figure or paragraph of the patent or publication which has some relation to the claimed invention," MPEP § 609.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR § 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR § 1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR § 1.98 and MPEP § 609 and the Examiner is respectfully requested to consider the listed references.

[X] The Commissioner is hereby authorized to charge our Deposit Account No. 12-1420 for any fees required in connection with the filing of this Information Disclosure Statement. **A duplicate copy of this Notice is enclosed for this purpose.** In particular, in the event that an Office Action has crossed in the mail with this Information Disclosure Statement, the Commissioner is authorized to charge the above-

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named deposit account for any fees required
pursuant to CFR §§ 1.17(p) or 1.17(i)(1).

Respectfully submitted,
LIMBACH & LIMBACH L.L.P.

Dated: 3-22-99

By: Cameron A. King
Cameron A. King
Reg. No. 41,897
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Our File: SNUS-125

FORM PTO-1449 (Modified) (Rev. 7-80)		U.S. Dept. of Commerce Patent and Trademark Office		Atty Docket No. SNUS-00125	Serial No. 08/896821		
				Applicant(s) Quay, Steven C.			
				Filing Date 07/18/97	Group 1616		
U.S. PATENT DOCUMENTS							
Examiner Initials	Document Number	Date	Name		Class	Sub-Class	Filing Date
	AA 3,615,972	10/26/71	MOREHOUSE, ET AL		156	79	04/28/67
	AB 3,650,831	03/21/72	JUNGERMANN, ET AL		134	27	03/10/69
	AC 3,968,203	07/06/76	SPITZER, ET AL		42	47	08/26/69
	AD 4,027,007	05/31/77	MESSINA				03/13/73
	AE 4,725,442	02/16/88	HAYNES				02/16/88
	AF 5,350,571	09/27/94	KAUFMAN, ET AL				02/24/92
	*AG 5,393,524	02/28/95	QUAY				06/04/93
	*AH 5,406,950	04/18/95	BRANDENBURGER, ET AL		128	662.02	12/23/93
	AI 5,409,688	04/25/95	QUAY				06/05/92
	*AJ 5,413,774	05/09/95	SCHNEIDER, ET AL				12/16/92
	*AK 5,425,366	06/20/95	REINHARDT, ET AL				06/07/93
	*AL 5,445,813	08/29/95	SCHNEIDER, ET AL				10/12/93
	*AM 5,487,390	02/13/96	COHEN, ET AL				09/01/94
	*AN 5,508,021	04/16/96	GRINSTAFF, ET AL				10/19/94
	*AO 5,512,268	04/30/96	GRINSTAFF, ET AL				06/06/95
	*AP 5,529,766	06/25/96	KLAVENESS, ET AL				03/28/92
	*AQ 5,531,980	07/02/96	SCHNEIDER, ET AL		424	9.52	09/30/94
	*AR 5,536,489	07/16/96	LOHRMANN, ET AL				05/12/95
	*AS 5,547,656	08/20/96	UNGER				05/24/95
	*AT 5,552,133	09/03/96	LAMBERT, ET AL				08/12/94
	*AU 5,556,610	09/17/96	YAN, ET AL				11/30/94
	AV 5,558,094	09/24/96	QUAY				02/01/95
	AW 5,558,853	09/24/96	QUAY				01/19/94
	AX 5,558,854	09/24/96	QUAY				01/30/95
	AY 5,558,855	09/24/96	QUAY				01/25/93
	*AZ 5,558,856	09/24/96	KLAVENESS, ET AL				01/09/92
	*BA 5,558,857	09/24/96	KLAVENESS, ET AL				06/03/91
	*BB 5,560,364	10/01/96	PORTER		128	662.02	05/12/95
	*BC 5,562,893	10/08/96	LOHRMANN				08/02/94

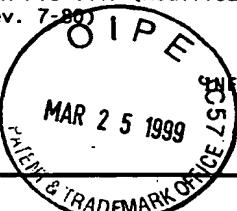
EXAMINER: _____

DATE CONSIDERED: _____

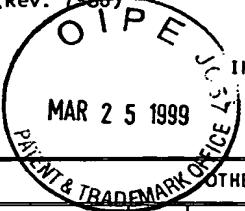
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U.S. PATENT DOCUMENTS							
Examiner Initials		Document Number	Date	Name	Class	Sub-Class	Filing Date
	*BD	5,567,413	10/22/96	KLAVENESS, ET AL			06/06/95
	*BE	5,567,414	10/22/96	SCHNEIDER, ET AL			06/01/95
	*BF	5,567,415	10/22/96	PORTER			06/01/94
	*BG	5,571,497	11/05/96	UNGER			06/06/95
	*BH	5,578,291	11/26/96	PORTER			09/06/94
	*BI	5,578,292	11/26/96	SCHNEIDER, ET AL			01/30/95
	*BJ	5,597,549	01/28/97	SCHNEIDER, ET AL			03/31/95
	*BK	5,599,523	02/04/97	BELLER, ET AL			11/22/94
	*BL	5,605,673	02/25/97	SCHUTT, ET AL			08/01/94
	*BM	5,606,973	03/04/97	LAMBERT, ET AL			06/07/95
	*BN	5,611,344	03/18/97	BERNSTEIN, ET AL			03/05/96
	*BO	5,614,169	03/25/97	KLAVENESS, ET AL			06/02/95
	*BP	5,618,514	04/08/97	SCHRODER, ET AL			12/22/94
	*BQ	5,626,833	05/06/97	SCHUTT, ET AL			06/07/95
	*BR	5,637,289	06/10/97	KLAVENESS, ET AL			01/08/93
	*BS	5,639,443	06/17/97	SCHUTT, ET AL			03/16/95
	*BT	5,643,553	07/01/97	SCHNEIDER, ET AL			09/26/95
	*BU	5,658,551	08/19/97	SCHNEIDER, ET AL			06/01/95

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DATE CONSIDERED: _____

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FOREIGN PATENT DOCUMENTS					
Examiner Initials		Document Number	Date	Country	Class Sub-Class
*BV		1,044,680	10/05/66	United Kingdom	C08 F47
BW		JP 2-35727	08/13/90	Japan	A61K 49/00
BX		WO 90/07500	07/12/90	Patent Cooperation Treaty	C07D 207/277
BY		WO 92/11873	07/23/92	Patent Cooperation Treaty	
BZ		WO 92/22298	12/23/92	Patent Cooperation Treaty	
*CA		WO 94/06477	03/31/94	Patent Cooperation Treaty	
CB		WO 94/09625	05/11/94	Patent Cooperation Treaty	

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 <p style="text-align: center;">INFORMATION DISCLOSURE CITATION</p> <p>MAR 25 1999</p>		Applicant(s) Quay, Steven C.		
		Filing Date 07/18/97	Group 1616	
OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, etc.)				
*CC	Barnhart, et al., CHARACTERISTICS OF ALBUNEX: AIR-FILLED MICROSPHERES FOR ECHOCARDIOGRAPHY CONTRAST ENHANCEMENT, Investigative Radiology, Vol. 25, Suppl. 1			
CD	Carlton, FLUOROCARBON TOXICITY: AEROSOL DEATHS AND ANAESTHETIC REACTIONS, Ann. of Clinical and Laboratory Science 6(5), pp. 411-14 (1978)			
CE	Clark, et al., CAN FLUOROCARBON EMULSIONS BE USED AS ARTIFICIAL BLOOD?, Triangle 11(4):115-22 (1972)			
CF	Coden, et al., INTRAOULAR PRESSURE RESPONSE AFTER PNEUMATIC RETINOPEXY, Ophthalmic Surgery 19(9):667-69 (1988)			
CG	Erickson, et al., METHYLCELLULOSE, Handbook of Pharmaceutical Excipients, American Pharmaceutical Association & Pharmaceutical Society of Great Britain, pp. 181-83 (1986)			
*CH	Feinstein, MYOCARDIAL PERfusion IMAGING: CONTRAST ECHOCARDIOGRAPHY TODAY AND TOMORROW, JACC 8(1):251-53 (1986)			
*CI	Gardner, et al., A SURVEY OF INTRAOULAR GAS USE IN NORTH AMERICA, Arch. Ophthalmol. 106:1188-89 (1988)			
*CJ	Hilpert, CONTRAST AGENTS IN DIAGNOSTIC ULTRASOUND, Diagnostic Ultrasound (Mosby Year Book) 1:30-42 (1991)			
*CK	Keller, et al., THE BEHAVIOR OF SONICATED ALBUMIN MICROBUBBLES WITHIN THE MICROCIRCULATION: A BASIS FOR THEIR USE DURING MYOCARDIAL CONTRAST ECHOCARDIOGRAPHY, Circulation Research, University of Virginia, School of Medicine, 65(2):458-67 (1989)			
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*CM	Levene, et al., CHARACTERIZATION OF ALBUNEX, J. Acoust. Soc. Am. 67:S69-70 (1990)			
*CN	Lincoff, et al., PERFLUORO-N-BUTANE: A GAS FOR A MAXIMUM DURATION RETINAL TAMPOADE, Arch. Ophthalmol. 101:460-62 (1983)			
CO	Mattrey, et al., LIVER AND SPLEEN SPECIFIC ULTRASOUND CONTRAST MATERIAL, Investigative Radiology 17(4):S28, Abstract 110 (1982)			
*CP	THE MERCK INDEX, 11th Edition, Merck & Co., Inc. publishers, pp. 297 and 1643 (1989)			
CQ	Robertson, et al., BEYOND PARTITION COEFFICIENTS - INDIVIDUAL PROPERTIES OF INFUSED INERT GASES INFLUENCING THEIR ELIMINATION FROM THE LUNG, Prog. Resp. Res. 21:177-81 (1986)			
*CR	Rosecan, et al., THERAPEUTIC ULTRASOUND IN THE TREATMENT OF RETINAL DETACHMENT: CLINICAL OBSERVATIONS AND LIGHT AND ELECTRON MICROSCOPY, Retina 5(2):115-22 (1985)			
*CS	Sakata, et al., ACUTE TOXICITY OF FLUOROCARBON-22: TOXIC SYMPTOMS, LETHAL CONCENTRATION, AND ITS FATE IN RABBIT AND MOUSE, Toxicology and Applied Pharmacology 59:64-70 (1981)			
CT	Sass, et al., GAS EMBOLISM DUE TO INTRAVENOUS FC 80 LIQUID FLUOROCARBON, J. Appl. Phys. 40(5):745-51 (1976)			
*CU	Schneider, et al., POLYMERIC MICROBALLOONS AS ULTRASOUND CONTRAST AGENTS: PHYSICAL AND ULTRASONIC PROPERTIES COMPARED WITH SONICATED ALBUMIN, Investigative Radiology 27(2):134-39 (1992)			
*CV	Serratrice, et al., CO-SOLUBILISATION DE FLUOROCARBURES ET D'EAU EN PRESENCE DE NOUVEAUX TENSIOACTIFS NON IONIQUES FLUORES, J. Chim. Phys. 87:1969-80 (1990)			
*CW	Simaan, et al., HEMODYN EFFECTS OF AEROSOL PROPELLANTS: I. CARDIAC DEPRESSION IN THE DOG, Toxicology 5:127-38 (1995)			

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INFORMATION DISCLOSURE CITATION				
MAR 25 1999 O I P E JCS PATENT & TRADEMARK OFFICE US				
OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, etc.)				
	CX	Unger, et al., NITROGEN-FILLED LIPOSOMES AS A VASCULAR US CONTRAST AGENT: PRELIMINARY EVALUATION, Radiology 185(2):453-56 (1992)		
	*CY	Wheatley, et al., CONTRAST AGENTS FOR DIAGNOSTIC ULTRASOUND: DEVELOPMENT AND EVALUATION OF POLYMER-COATED MICROBUBBLES, Biomaterial 11:713-717 (1990)		
	*CZ	Whitacre, B-SCAN ULTRASONOGRAPHY OF EYES CONTAINING INTRAVITREAL GAS, Am. J. Ophthalmol.: Series 3, 112(3):272-77 (1991)		
	*DA	White, et al., BIBLIOGRAPHY OF BIOMEDICAL ULTRASOUND, Ultrasound in Med. and Biol. 13(9):571-86 (1987)		

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